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EXAMINER
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COLUCCI, MICHAEL C

ART UNIT	PAPER NUMBER
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2626

NOTIFICATION DATE	DELIVERY MODE
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05/11/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/692,025	<b>Applicant(s)</b> YI ET AL.	
	<b>Examiner</b> MICHAEL COLUCCI	<b>Art Unit</b> 2626	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 10, 12 and 14-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10, 12 and 14-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 03/01/2011 have been fully considered but they are not persuasive.

#### **Argument \*\*\* (page 6 ¶ 1):**

- “Applicants respectfully submit, though, that Paik does not describe determining the location of the definite article within the sentence. Paik is limited to describing that a determiner links to a nouns... Thus Paik describes only the relation of terms to each other, not the location of terms within a sentence”

#### **Response to argument:**

Examiner disagrees and maintains the use of Paik, wherein the system of Boguraev is improved by Paik to identify the beginning and end of sentences, which in fact will determine noun phrases relevant to the context of a document. In other words, Paik improves the anaphoric drawbacks identified by Boguraev, such as by locating the beginning and end of a sentence, it will be much easier to identify noun phrases that may have antecedent basis without looking at previous sentences and instead linking the concept of a document or text portion to an isolated sentence. For instance the sentences containing antecedent terms (i.e. “the”) of Boguraev’s Col. 7 lines 33-67 is improved by Paik to identify the beginnings and ends of sentences to further improve finding all referents or antecedents (i.e. “. The”) which are commonly found at the

Art Unit: 2626

beginning of a sentence. For instance, "The" is a very common word to initiate a sentence with. Paik can improve Boguraev (by finding the beginning of a sentence) to locate "The" for instance, to maintain proper antecedent reference with respect to the context of an article in both the local domain and entirety of a document. For instance consider that Boguraev teaches in Table 4 "*The operating system is the software that controls*". Paik would improve identifying the beginnings of sentences which contain antecedent terms such as ". The" followed by "operating system", as clearly referring to the software that is an operating system, such as Apple software as the context of the document. Please see rejection below.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 10, 12, and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boguraev et al. US 6185592 B1 (hereinafter Boguraev) in view of Chase US 6332143 B1 (hereinafter Chase) and further in view of Paik et al. US 6076088 A (hereinafter Paik).

Art Unit: 2626

Re claim 10, Boguraev teaches a method for extracting opinions about a subject of interest from a text document having a plurality of sentences, the subject associated with a plurality of features (Col. 10 line 19 - Col. 11 line 26), the method comprising:

determining from the document feature terms related to the features most relevant to the subject (Col. 5 lines 1-8, most representative phrasal units, to provide core content) comprising:

extracting from the document feature terms (Col. 5 lines 1-8) related to the features most relevant to the subject (Col. 10 line 19 - Col. 11 line 26);

for each sentence referring to a feature term (Col. 10 line 19 - Col. 11 line 26), determining whether the sentence includes an opinion polarity about the feature term; an

for each sentence referring to the subject (Col. 10 line 19 - Col. 11 line 26), determining whether the sentence includes an opinion polarity about the subject,

for each sentence having a feature term and an opinion term, parsing the sentence with an English parser (Col. 8 lines 9-32, tagged syntactic information streamed) to identify grammatical components in the sentence and relationships between said components (Col. 10 line 19 - Col. 11 line 26), and identifying an opinion polarity associated with said feature term using the opinion dictionary

However, Boguraev fails to teach determining whether the sentence includes an opinion polarity about the subject term and feature term

identifying opinion terms in the sentence using an opinion dictionary, each entry in the dictionary having an opinion term, a part-of-speech tag, and an associated opinion polarity

identifying an opinion polarity associated with said feature term using the opinion dictionary

Chase teaches one denotative field is assigned to the word or phrase. A second denotative field is assigned to the denotative context (dictionary meaning) of the word or phrase. A third denotative field is assigned to the part of speech. Preferably, each context of each word is assigned a separate database record. Thus, if the dictionary definition of a single word has two meanings among a total of five denotative contexts, then there are five records, one for each context. There may be multiple contexts for a given dictionary meaning when, for example, there are different parts of speech for the word/meaning. (Chase Col. 7 lines 23-43).

Further, Chase teaches connotative meanings for any given term are identified from a range of emotional descriptor terms. There are a plurality of predefined categories of emotional descriptors. In one embodiment described below for the English language there are 8 categories. In the preferred embodiment there are four categories of positive emotions (e.g., affection/friendliness, enjoyment/elation, amusement/excitement and contentment/gratitude) and four categories of negative emotions (e.g., sadness/grief, anger/loathing, fear/uneasiness, and humiliation/shame). Within each category there are a predefined list of emotional descriptors. A term may have a connotative meaning in any or all of the emotional categories. Some terms may

Art Unit: 2626

not have any connotative meaning. In some embodiments only one emotional descriptor is permitted to be assigned for a given emotional category for a given term. Thus, for an eight category embodiment, any term can have 0 to 8 emotional descriptors--the emotional descriptors being from different emotional categories. In other embodiments a primary and a secondary emotional descriptor may be assigned for any given term. For such an embodiment, which is based on 8 emotional categories, any term can have 0-16 emotional descriptors--the emotional descriptors being in pairs, where the two emotional descriptors in a given pair being for a given emotional category. Different pairs include emotional descriptors for different emotional categories (Chase Col. 4I lines 9-36 & Fig. 4-7).

Furthermore, Chase teaches word relationship with one another, wherein one term will describe another term (i.e. lonely people) within the context of the emotion of a document (Fig. 6 and 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Boguraev to incorporate determining whether the sentence includes an opinion polarity about the feature term, identifying opinion terms in the sentence using an opinion dictionary, each entry in the dictionary having an opinion term, a part-of-speech tag, and an associated opinion polarity, identifying an opinion polarity associated with said feature term using the opinion dictionary as taught by Chase to allow for various fields within a dictionary (i.e. meaning, context, parts of speech) (Chase Col. 7 lines 23-34), wherein stored emotional content is defined as 0 to n emotional connotations per record (or per term in the passage)

Art Unit: 2626

whereby emotional connotations stored for each term in the database are associated with either a positive emotional category or a negative emotional category and displayed graphically (Chase Col. 11 line 45 – Col. 12 line 16 & Fig. 5-7).

However, Boguraev in view of Chase fails to teach the grammatical components including verb phrases, subject phrases, object phrases, complements, and prepositional phrases, each feature term may have a modifier describing the feature term, and the identifying includes for each sentence having a verb phrase where the verb phrase has no matching entry in the opinion dictionary, assigning an opinion polarity of the modifier of the feature term to the feature term, the opinion polarity of the modifier being defined in the opinion dictionary

deriving an opinion skeleton for each of the extracted opinion, thereby providing supporting details for this opinion

determining a definite article is located at the beginning of a sentence in the plurality of sentences

determining the definite article precedes the feature term

Paik teaches that each original and morphologically standardized (e.g., the plural form of a noun converted to the singular form and the past tense form of a verb converted to the present tense form) phrase candidate and phrasal verb candidate is checked against Conceptual Hierarchy database 117 until the match is found. If no match is found then the phrase or phrasal verb is not considered as a concept. The component words, which are open class words, of the phrase or the phrasal verbs are



Art Unit: 2626

considered as concepts. The following example illustrates how CHES identifies concepts in the sample sentence:

"David Smith put off paying his 250 dollar telephone bill until it was overdue."

CHES identifies "David Smith" as a personal proper name, "put off" as a phrasal verb (a combination of a verb plus a preposition or an adverb), "250 dollar" as a monetary numeric concept, and "telephone bill" as complex nominal. "Paying" and "overdue" are each identified as single word concepts. "Put off" was identified by consulting the Conceptual Hierarchy database to determine its idiomatic meaning. Conceptual Hierarchy database 117 maps related words and terms (synonyms) into a single concept cluster. The database differentiates between phrases as concept units and single term concepts. The concepts are organized as a hierarchical set of relations in the database (Paik Col. 12 lines 45-67).

Further, Paik teaches rules that map a meaning to both verb and other grammatical elements, wherein Paik maps syntactic relations such as "subject of the transitive verb" to their semantic functional equivalents so that a subject of a verb might be described as "agent of the action" of a verb. For example, in the sentence "Mr. MacGregor hoed his lettuce patch," Mr. MacGregor is the subject of the transitive verb "to hoe," and this is mapped to the semantic relation which describes Mr. MacGregor as "Agent" of the action. Rules for mapping to semantic relations are contained in Mapping Rule Base 212 (Paik Col. 17 line 60 – Col. 18 line 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Boguraev in view of Chase to incorporate grammatical components including verb phrases, subject phrases, object phrases, complements, and prepositional phrases, each feature term may have a modifier describing the feature term, and the identifying includes for each sentence having a verb phrase where the verb phrase has no matching entry in the opinion dictionary, assigning an opinion polarity of the modifier of the feature term to the feature term, the opinion polarity of the modifier being defined in the opinion dictionary and deriving an opinion skeleton for each of the extracted opinion, thereby providing supporting details for this opinion, and wherein each feature term is proceeded by a definite article as taught by Paik to allow for the relational mapping of verb and subject for instance (Paik Col. 17 line 60 – Col. 18 line 5), wherein if no matching element is identified the concept of a phrase is extracted based on other elements separate from the non-matching element, and the meaning still derived into a cluster concept, whereby a verb or another element will relate to define a concept (Paik Col. 12 lines 45-67), wherein by extracting a determiner of a noun in a sentence and creating a grammatical rule base which recognizes a larger variety of linguistic constructions, thus eliminating repetitive versions of the same story (Paik Col. 18 line 13-61 & Fig. 4) and improving the semantic and syntactic analysis of Boguraev when extracting the topic of a document.

Additionally, Paik teaches another ability of CHES such as what is called an apposition Identifier that represents one type of linguistic construction, the appositional

Art Unit: 2626

phrase, which can be identified automatically. Appositions typically are a rich source of information concerning proximal named entities. For instance, "Dr. James, a board-certified neurosurgeon . . ." contains the appositional phrase "board-certified surgeon" which describes Dr. James. Other linguistic constructions which contain this kind of information are also identified in similar modules, depending on the corpus in question. For instance, the copula sentence, "John is a fisherman" also yields descriptive information which CHESS can extract about the subject. Apposition Evidence Database 157 contains specific linguistic patterns which signal the beginning and end of appositional phrases (Paik Col 11 lines 25-38).

Paik also teaches an end-of-sentence detection module (Paik Col 10 lines 25-45).

It would have also been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Boguraev and Chase to incorporate determining a definite article is located at the beginning of a sentence in the plurality of sentences

determining the definite article precedes the feature term

as taught by Paik to allow for the detection of an end of a sentence, wherein the system of Paik would know the beginning of a sentence upon detection of its preceding sentence end (Paik Col 10 lines 25-45), wherein when a phrase such as an appositional phrase is present, the system of Paik contains specific linguistic patterns which signal the beginning *and* end of appositional phrases, (Paik Col 11 lines 25-38), thereby improving the system of Boguraev to improve the probability of finding the combination

Art Unit: 2626

of a feature term and its definite article which are often located at the earlier or beginning sections of sentence, thereby utilizing Paik's detection of the end and beginning of a sentence such as Boguraev's "The operating system is the software that controls", wherein the beginning of the this sentence can be located and the definite article identified (i.e. the term (The) that is associated with a noun (operating system... software) relative to a context that has anaphoric and antecedent validity (document or text about computers)).

Re claim 12, Boguraev fails to teach the method as recited in claim 10, wherein the opinion polarity associated with the feature term is identified based on an opinion rule.

Chase teaches one denotative field is assigned to the word or phrase. A second denotative field is assigned to the denotative context (dictionary meaning) of the word or phrase. A third denotative field is assigned to the part of speech. Preferably, each context of each word is assigned a separate database record. Thus, if the dictionary definition of a single word has two meanings among a total of five denotative contexts, then there are five records, one for each context. There may be multiple contexts for a given dictionary meaning when, for example, there are different parts of speech for the word/meaning. (Chase Col. 7 lines 23-43).

Further, Chase teaches connotative meanings for any given term are identified from a range of emotional descriptor terms. There are a plurality of predefined

Art Unit: 2626

categories of emotional descriptors. In one embodiment described below for the English language there are 8 categories. In the preferred embodiment there are four categories of positive emotions (e.g., affection/friendliness, enjoyment/elation, amusement/excitement and contentment/gratitude) and four categories of negative emotions (e.g., sadness/grief, anger/loathing, fear/uneasiness, and humiliation/shame). Within each category there are a predefined list of emotional descriptors. A term may have a connotative meaning in any or all of the emotional categories. Some terms may not have any connotative meaning. In some embodiments only one emotional descriptor is permitted to be assigned for a given emotional category for a given term. Thus, for an eight category embodiment, any term can have 0 to 8 emotional descriptors--the emotional descriptors being from different emotional categories. In other embodiments a primary and a secondary emotional descriptor may be assigned for any given term. For such an embodiment, which is based on 8 emotional categories, any term can have 0-16 emotional descriptors--the emotional descriptors being in pairs, where the two emotional descriptors in a given pair being for a given emotional category. Different pairs include emotional descriptors for different emotional categories (Chase Col. 4I lines 9-36 & Fig. 4-7).

Furthermore, Chase teaches word relationship with one another, wherein one term will describe another term (i.e. lonely people) within the context of the emotion of a document (Fig. 6 and 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Boguraev to incorporate the opinion

Art Unit: 2626

polarity associated with the feature term is identified based on an opinion rule as taught by Chase to allow for an overall summary of a document both topically and emotionally from a narrow or global analysis, wherein the relationship of words to one another allows for the proper identification of emotion/opinion of a document (Chase Col. 41 lines 9-36).

Re claim 14, Boguraev fails to teach the method as recited in claim 12, wherein the rule base comprises a plurality of rules each having a relationship term, a target of the opinion, and a polarity of the opinion.

Chase teaches one denotative field is assigned to the word or phrase. A second denotative field is assigned to the denotative context (dictionary meaning) of the word or phrase. A third denotative field is assigned to the part of speech. Preferably, each context of each word is assigned a separate database record. Thus, if the dictionary definition of a single word has two meanings among a total of five denotative contexts, then there are five records, one for each context. There may be multiple contexts for a given dictionary meaning when, for example, there are different parts of speech for the word/meaning. (Chase Col. 7 lines 23-43).

Further, Chase teaches connotative meanings for any given term are identified from a range of emotional descriptor terms. There are a plurality of predefined categories of emotional descriptors. In one embodiment described below for the English language there are 8 categories. In the preferred embodiment there are four categories of positive emotions (e.g., affection/friendliness, enjoyment/elation,

Art Unit: 2626

amusement/excitement and contentment/gratitude) and four categories of negative emotions (e.g., sadness/grief, anger/loathing, fear/uneasiness, and humiliation/shame). Within each category there are a predefined list of emotional descriptors. A term may have a connotative meaning in any or all of the emotional categories. Some terms may not have any connotative meaning. In some embodiments only one emotional descriptor is permitted to be assigned for a given emotional category for a given term. Thus, for an eight category embodiment, any term can have 0 to 8 emotional descriptors--the emotional descriptors being from different emotional categories. In other embodiments a primary and a secondary emotional descriptor may be assigned for any given term. For such an embodiment, which is based on 8 emotional categories, any term can have 0-16 emotional descriptors--the emotional descriptors being in pairs, where the two emotional descriptors in a given pair being for a given emotional category. Different pairs include emotional descriptors for different emotional categories (Chase Col. 4l lines 9-36 & Fig. 4-7).

Furthermore, Chase teaches word relationship with one another, wherein one term will describe another term (i.e. lonely people) within the context of the emotion of a document (Fig. 6 and 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Boguraev to incorporate the rule base comprises a plurality of rules each having a relationship term, a target of the opinion, and a polarity of the opinion as taught by Chase to allow for an overall summary of a document both topically and emotionally from a narrow or global analysis, wherein the

Art Unit: 2626

relationship of words to one another allows for the proper identification of emotion/opinion of a document (Chase Col. 4I lines 9-36).

Re claim 15, Boguraev fails to teach the method as recited in claim 12, wherein the rule base comprises a plurality of rules each having a relationship term, a source of the opinion, and a target of the opinion.

Chase teaches one denotative field is assigned to the word or phrase. A second denotative field is assigned to the denotative context (dictionary meaning) of the word or phrase. A third denotative field is assigned to the part of speech. Preferably, each context of each word is assigned a separate database record. Thus, if the dictionary definition of a single word has two meanings among a total of five denotative contexts, then there are five records, one for each context. There may be multiple contexts for a given dictionary meaning when, for example, there are different parts of speech for the word/meaning. (Chase Col. 7 lines 23-43).

Further, Chase teaches connotative meanings for any given term are identified from a range of emotional descriptor terms. There are a plurality of predefined categories of emotional descriptors. In one embodiment described below for the English language there are 8 categories. In the preferred embodiment there are four categories of positive emotions (e.g., affection/friendliness, enjoyment/elation, amusement/excitement and contentment/gratitude) and four categories of negative emotions (e.g., sadness/grief, anger/loathing, fear/uneasiness, and humiliation/shame). Within each category there are a predefined list of emotional descriptors. A term may



Art Unit: 2626

have a connotative meaning in any or all of the emotional categories. Some terms may not have any connotative meaning. In some embodiments only one emotional descriptor is permitted to be assigned for a given emotional category for a given term. Thus, for an eight category embodiment, any term can have 0 to 8 emotional descriptors--the emotional descriptors being from different emotional categories. In other embodiments a primary and a secondary emotional descriptor may be assigned for any given term. For such an embodiment, which is based on 8 emotional categories, any term can have 0-16 emotional descriptors--the emotional descriptors being in pairs, where the two emotional descriptors in a given pair being for a given emotional category. Different pairs include emotional descriptors for different emotional categories (Chase Col. 4I lines 9-36 & Fig. 4-7).

Furthermore, Chase teaches word relationship with one another, wherein one term will describe another term (i.e. lonely people) within the context of the emotion of a document (Fig. 6 and 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Boguraev to incorporate the rule base comprises a plurality of rules each having a relationship term, a source of the opinion, and a target of the opinion as taught by Chase to allow for an overall summary of a document both topically and emotionally from a narrow or global analysis, wherein the relationship of words to one another allows for the proper identification of emotion/opinion of a document (Chase Col. 4I lines 9-36).

Re claim 16, Boguraev fails to teach the method as recited in claim 15, wherein the target of the opinion is a component of the sentence to which the opinion is to be assigned.

Chase teaches one denotative field is assigned to the word or phrase. A second denotative field is assigned to the denotative context (dictionary meaning) of the word or phrase. A third denotative field is assigned to the part of speech. Preferably, each context of each word is assigned a separate database record. Thus, if the dictionary definition of a single word has two meanings among a total of five denotative contexts, then there are five records, one for each context. There may be multiple contexts for a given dictionary meaning when, for example, there are different parts of speech for the word/meaning. (Chase Col. 7 lines 23-43).

Further, Chase teaches connotative meanings for any given term are identified from a range of emotional descriptor terms. There are a plurality of predefined categories of emotional descriptors. In one embodiment described below for the English language there are 8 categories. In the preferred embodiment there are four categories of positive emotions (e.g., affection/friendliness, enjoyment/elation, amusement/excitement and contentment/gratitude) and four categories of negative emotions (e.g., sadness/grief, anger/loathing, fear/uneasiness, and humiliation/shame). Within each category there are a predefined list of emotional descriptors. A term may have a connotative meaning in any or all of the emotional categories. Some terms may not have any connotative meaning. In some embodiments only one emotional descriptor is permitted to be assigned for a given emotional category for a given term.

Art Unit: 2626

Thus, for an eight category embodiment, any term can have 0 to 8 emotional descriptors--the emotional descriptors being from different emotional categories. In other embodiments a primary and a secondary emotional descriptor may be assigned for any given term. For such an embodiment, which is based on 8 emotional categories, any term can have 0-16 emotional descriptors--the emotional descriptors being in pairs, where the two emotional descriptors in a given pair being for a given emotional category. Different pairs include emotional descriptors for different emotional categories (Chase Col. 41 lines 9-36 & Fig. 4-7).

Furthermore, Chase teaches word relationship with one another, wherein one term will describe another term (i.e. lonely people) within the context of the emotion of a document (Fig. 6 and 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Boguraev to incorporate the target of the opinion is a component of the sentence to which the opinion is to be assigned as taught by Chase to allow for an overall summary of a document both topically and emotionally from a narrow or global analysis, wherein the relationship of words to one another allows for the proper identification of emotion/opinion of a document (Chase Col. 41 lines 9-36).

Re claim 17, Boguraev fails to teach the method as recited in claim 15, wherein the source of the opinion is a component of the sentence of which opinion polarity is to be assigned to the target.

Chase teaches one denotative field is assigned to the word or phrase. A second denotative field is assigned to the denotative context (dictionary meaning) of the word or phrase. A third denotative field is assigned to the part of speech. Preferably, each context of each word is assigned a separate database record. Thus, if the dictionary definition of a single word has two meanings among a total of five denotative contexts, then there are five records, one for each context. There may be multiple contexts for a given dictionary meaning when, for example, there are different parts of speech for the word/meaning. (Chase Col. 7 lines 23-43).

Further, Chase teaches connotative meanings for any given term are identified from a range of emotional descriptor terms. There are a plurality of predefined categories of emotional descriptors. In one embodiment described below for the English language there are 8 categories. In the preferred embodiment there are four categories of positive emotions (e.g., affection/friendliness, enjoyment/elation, amusement/excitement and contentment/gratitude) and four categories of negative emotions (e.g., sadness/grief, anger/loathing, fear/uneasiness, and humiliation/shame). Within each category there are a predefined list of emotional descriptors. A term may have a connotative meaning in any or all of the emotional categories. Some terms may not have any connotative meaning. In some embodiments only one emotional descriptor is permitted to be assigned for a given emotional category for a given term. Thus, for an eight category embodiment, any term can have 0 to 8 emotional descriptors--the emotional descriptors being from different emotional categories. In other embodiments a primary and a secondary emotional descriptor may be assigned

Art Unit: 2626

for any given term. For such an embodiment, which is based on 8 emotional categories, any term can have 0-16 emotional descriptors--the emotional descriptors being in pairs, where the two emotional descriptors in a given pair being for a given emotional category. Different pairs include emotional descriptors for different emotional categories (Chase Col. 4I lines 9-36 & Fig. 4-7).

Furthermore, Chase teaches word relationship with one another, wherein one term will describe another term (i.e. lonely people) within the context of the emotion of a document (Fig. 6 and 7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Boguraev to incorporate the source of the opinion is a component of the sentence of which opinion polarity is to be assigned to the target as taught by Chase to allow for an overall summary of a document both topically and emotionally from a narrow or global analysis, wherein the relationship of words to one another allows for the proper identification of emotion/opinion of a document (Chase Col. 4I lines 9-36).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL COLUCCI whose telephone number is

Art Unit: 2626

(571)270-1847. The examiner can normally be reached on 9 am - 6:00 pm , Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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